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AGILENT TECHNOLOGIES, INC.
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EXAMINER

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1639

DATE MAILED: 01/26/2006

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GROUP 1600

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/061,800
Filing Date: January 30, 2002
Appellant(s): SHCHEGROVA ET AL.

Bret Field
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/28/2005 appealing from the Office action
mailed 06/02/2005.

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(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is incorrect.

The amendment after final rejection filed on 07/19/2005 has been entered wherein appellant have cancelled the withdrawn claims 34-48.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 1-3, 5-19, 21-29, and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (US Patent 5,807,522) and Tisone et al. (US Patent 6,063,339).

Brown et al. disclose a method and apparatus for forming microarray (Abstract; col. 3, line 24 to col. 4, line 15). The apparatus use in the method for forming microarray comprises a positioning structure (transport system), a dispensing structure (head system), and a control unit (processor) that control the positioning and dispensing structures (i.e. controlling where the droplet is place on the substrate to produce the desired pattern) (col. 3, lines 59 to col. 4, lines 15). The dispensing structure comprises a dispensing device (dispenser) for depositing a fluid onto the surface of the substrate, which can be one or a plurality of dispensers (col. 4, lines 12-15). The method comprises of loading the dispenser with a reagent solution, moving the dispenser to a selected position with respect to a support surface, dispensing the solution reagent onto the surface of the substrate, and the steps are repeated to produce an array (col. 7, lines 55-65; col. 9, lines 5-10; col. 10, line 63 to col. 11, line 28).

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The method of Brown et al. does not expressly include the step of identifying an error dispenser.

Tisone et al. disclose a method and apparatus for forming an array (Abstract; col. 3, line 63 to col. 4, line 13). The apparatus comprises a dispensing head (head system) mounted on or in association with a gantry (transport system), and a controller (col. 7, line 8 to col. 8, line 55). The apparatus further comprises multiple dispensing head (col. 7, lines 61-64; col. 22, lines 16-31). The method comprises the steps of loading the dispenser with a solution, dispensing droplets from the dispensers onto the substrate, and repeating the dispensing sequence steps to form an array (col. 7 line 8 to col. 8, line 55; col. 22, line 48 to col. 23, line 12). The method further comprise of the controller would determine a phase adjustment for each dispense cycle either before or during production such that a high degree of accuracy, precision, and repeatability is attained (i.e. detecting any error made by the dispenser and taking corrective measurement) (col. 8, lines 48-55).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the step of identifying an error dispenser as taught by Tisone et al. in the method of Brown et al. One of ordinary skill in the art would have been motivated to include the step of identifying an error dispenser in the method of Brown et al. for the advantage of providing an apparatus dispenser system wherein the control system that precisely coordinates dispensing operations with a high degree of accuracy, precision, and repeatability since both Brown et al. and Tisone et al. disclose the method of using an dispenser system to make an array (Brown: col. 3, line 24 to col. 4, line 15; Tisone: col. 3, line 63 to col. 4, line 13). Furthermore, one of ordinary skill in the art would have reasonably expectation of success in the combination

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of Brown et al. and Tisone et al. because Tisone et al. disclose by examples of using the dispenser system in making an array.

2. Claims 4, 20, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (US Patent 5,807,522) and Tisone et al. (US Patent 6,063,339) as applied to claims 1-3, 5-19, 21-29, and 31-33 above, and further in view of Gamble et al. (US Patent 5,958,342).

Both Brown et al. and Tisone et al. disclose a method and apparatus for forming microarray (Brown: Abstract; col. 3, line 24 to col. 4, line 15; Tisone: Abstract; col. 3, line 63 to col. 4, line 13). The apparatus use in the method for forming microarray comprises a transport system, a head system, and a processor that control the positioning and dispensing structures (i.e. controlling where the droplet is place on the substrate to produce the desired pattern) (Brown: col. 3, lines 59 to col. 4, lines 15; Tisone: col. 7, line 8 to col. 8, line 55; col. 22, lines 16-31). The method comprises of loading the dispenser with a reagent solution, moving the dispenser to a selected position with respect to a support surface, dispensing the solution reagent onto the surface of the substrate, and the steps are repeated to produce an array (Brown: col. 7, lines 55-65; col. 9, lines 5-10; col. 10, line 63 to col. 11, line 28; Tisone: col. 7 line 8 to col. 8, line 55; col. 22, line 48 to col. 23, line 12). The method of Tisone et al. further comprise of the controller would determine a phase adjustment for each dispense cycle either before or during production such that a high degree of accuracy, precision, and repeatability is attained (i.e. detecting any error made by the dispenser and taking corrective measurement) (col. 8, lines 48-55). Thus the method combination of Brown et al. and Tisone et al. would have been obvious for the advantage of providing an apparatus dispenser system wherein the control system that precisely coordinates

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dispensing operations with a high degree of accuracy, precision, and repeatability since both Brown et al. and Tisone et al. disclose the method of using an dispenser system to make an array.

However, both the method of Brown et al. and Tisone et al. does not expressly disclose that the dispenser is pulse jet.

Gamble et al. disclose a device and method for precise production of arrays of microspots (Abstract; col. 1, lines 49-61; col. 12, line 61 to col. 13, line 25). The device comprise pulse jet dispensers, a control system that move the dispensers from the storage bank to the dispensing site for directing droplets to predetermined site on the surface (col. 2, lines 43-65). The pulse jetting dispenser would provide a more rugged device that produces an accurate, repetitive dispensing of droplets (col. 15, lines 1-17).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a pulse jet dispenser as taught by Gamble et al. in the apparatus of Brown et al. and Tisone et al. One of ordinary skill in the art would have been motivated to include a pulse jet dispenser in the apparatus of Brown et al. and Tisone et al. for the advantage of providing a more rugged device that produces an accurate, repetitive dispensing of droplets (Gamble col. 15, lines 1-17) since Brown et al., Tisone et al., and Gamble et al. disclose the method of using an dispenser system to make an array (Brown: col. 3, line 24 to col. 4, line 15; Tisone: col. 3, line 63 to col. 4, line 13; Gamble: Abstract). Furthermore, one of ordinary skill in the art would have reasonably expectation of success in the combination of Brown et al., Tisone et al., and Gamble et al. because gamble et al. discloses using the jetting device system in making an DNA array (col. 14, lines 41-67).

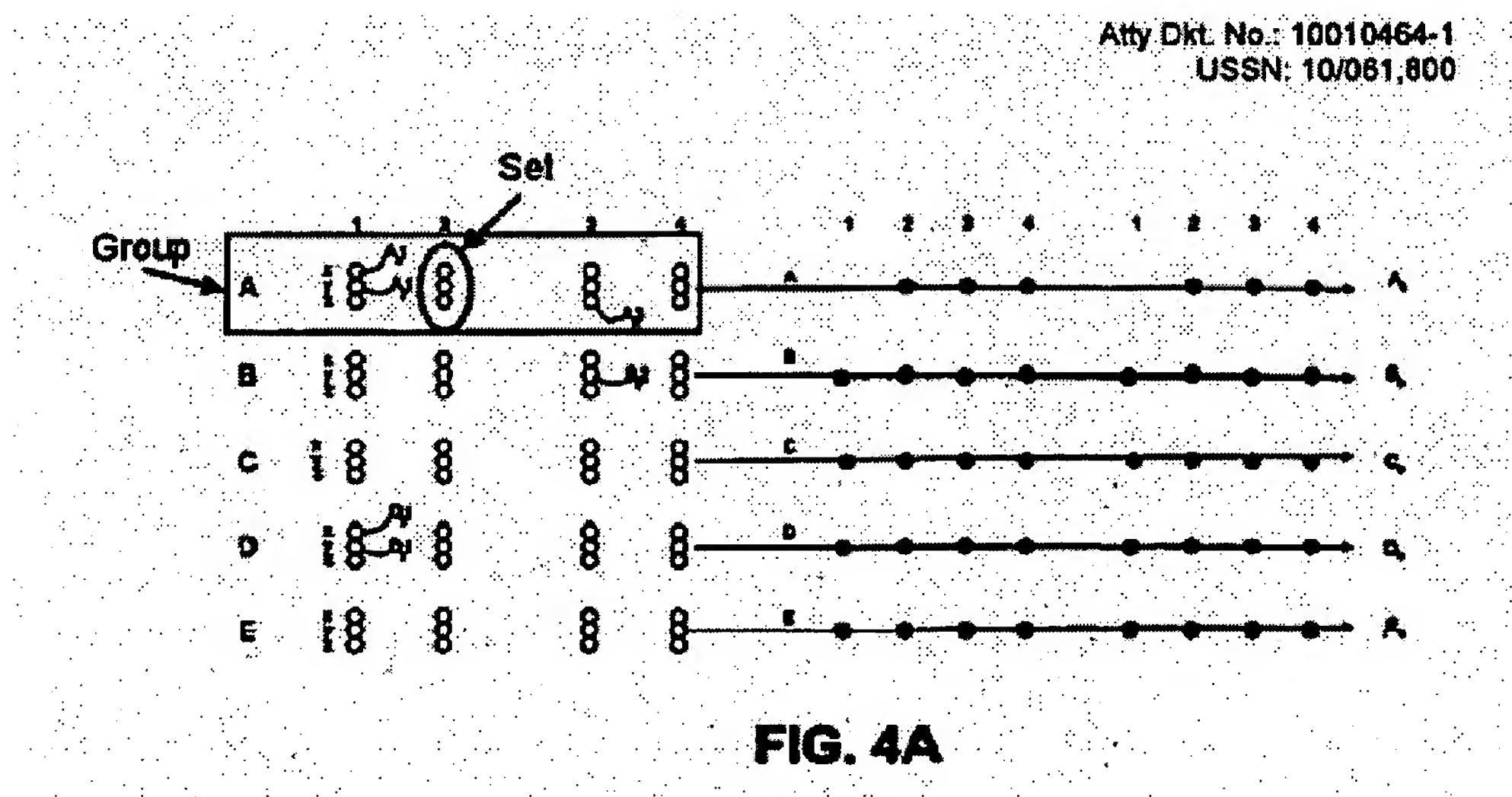
(10) Response to Argument

3. Claims 1-3, 5-19, 21-29, and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (US Patent 5,807,522) and Tisone et al. (US Patent 6,063,339).

DISCUSSION

Appellant has regrouped the claims of the rejection and argue each group separately.

For Group I (Claims 1, 2 and 5), appellant contends that the combine references of Brown et al. and Tisone et al. is not obvious over the instant claimed method because neither Brown et al. nor Tisone et al. teach or suggest the instant claimed head system with multiple groups of drop dispensers wherein *'Each Group of dispensers of the claimed head system contains at least one Set of dispensers, with each Set containing multiple dispensers'* as exemplify by fig. 4A of the instant specification. See fig 4A below.



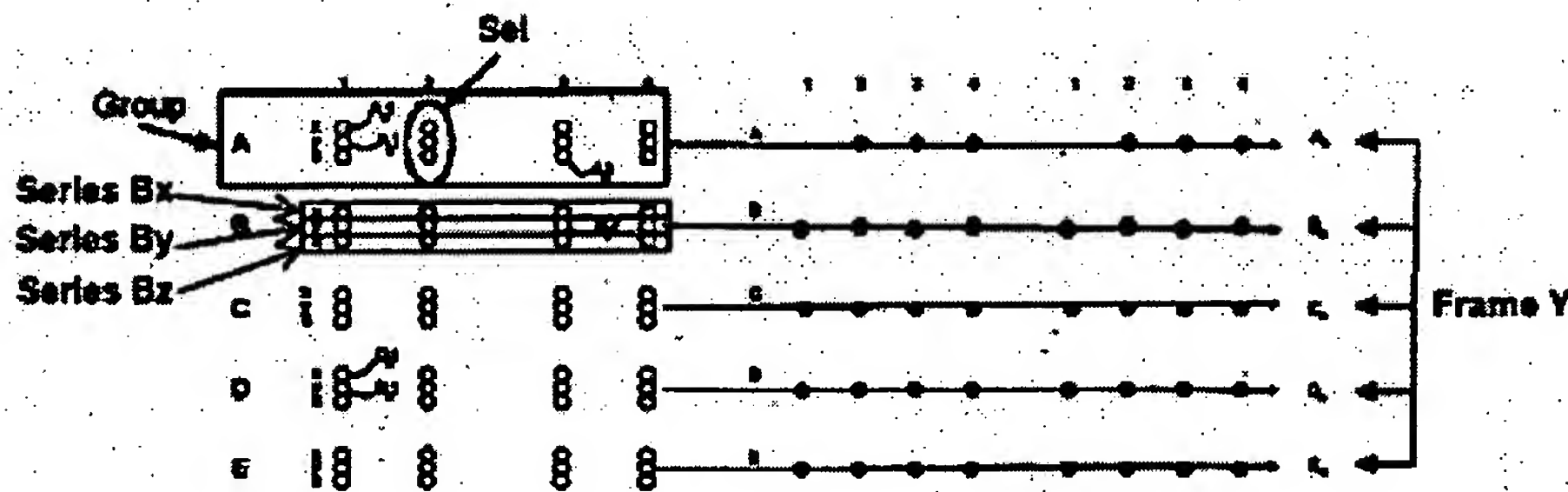
And thus neither Brown et al. nor Tisone et al. teach or suggest the instant claimed method steps of *'dispensing drops from non-error first dispensers of the sets in at least part of the pattern along the selected path for each group'* and the step of *'moving a second dispenser of the sets in*

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each group along the selected path for that group while dispensing drops from a non-error second dispenser of a set having an identified error first dispenser, in at least part of the pattern for the selected path of the first group'.

For Group II (Claim 3), appellant alleges that the combine references of Brown et al. and Tisone et al. is not obvious over the instant claimed method because neither Brown et al. nor Tisone et al. teach or suggest *'that dispensers of a Set communicate with a common reservoir.'*

For Group III (Claim 6), appellant argues that the combine references of Brown et al. and Tisone et al. is not obvious over the instant claimed method because neither Brown et al. nor Tisone et al. teach or suggest *'Series of dispensers or dispenser Frames as is claimed in claim 6'* such as that exemplify by fig. 4A of the instant specification. See fig 4A below.

**FIG. 4A**

For Group IV (Claims 7-11, 13, 14, and 22-24), appellant alleges that the combine references of Brown et al. and Tisone et al. is not obvious over the instant claimed method because neither Brown et al. nor Tisone et al. teach or suggest *'that the Sets of dispensers are in a sideways orientation with respect to the "first direction".'*

For Group V (Claims 12, 15-19, 25-29, 32, and 33), appellant argues that the combine references of Brown et al. and Tisone et al. is not obvious over the instant claimed method

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because neither Brown et al. nor Tisone et al. teach or suggest the dispenser *Frames* as claimed and ‘*methods for choosing which Frame to use during successive steps of the claimed array fabrication process.*’

For Group VI (Claims 21 and 31), appellant contends that the combine references of Brown et al. and Tisone et al. is not obvious over the instant claimed method because neither Brown et al. nor Tisone et al. teach or suggest ‘*that dispensers of a Set communicate with a common reservoir.*’

Thus, the combine teachings of Brown et al. and Tisone et al. do not render the method of the instant claims *prima facie* obvious.

Appellant’s arguments are not convincing since the combine teachings of Brown et al. and Tisone et al. do render the method of the instant claims *prima facie* obvious.

In response to appellant argument regarding Group I (Claims 1, 2 and 5) that the combine references of Brown et al. and Tisone et al. are not obvious over the instant claimed method because neither Brown et al. nor Tisone et al. teach or suggest the instant claimed head system with multiple groups of drop dispenser, it is the examiner position that both Brown et al. and Tisone et al. do disclose a head system with multiple dispensing heads (Brown: col. 4, lines 12-15; Tisone: col. 7, lines 61-67; col. 22, lines 7-31). Additionally, in response to applicant's argument that the references fail to show certain features of applicant’s invention, it is noted that the features upon which applicant relies (i.e., ‘*each Set containing multiple dispensers*’ and specifically as exemplify by appellant of fig. 4A) are not recited in the rejected claim(s).

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir.

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1993). Furthermore, the term “set” would encompasses the interpretation of a single dispenser, and this interpretation is fully supported by the definition of the term ‘set’ as define in the instant specification, i.e. *‘A "set" or "sub-set" of any item (such as a set of dispensers) may contain only one of the item, or only two, or three, or any number of multiple items’* (pg. 8, lines 28-29). In this case a group of dispensers can be interpreted, as a ‘single’ row of dispenser and a single dispenser is a “set”. Therefore, the combine references of Brown et al. and Tisone et al. do suggest the instant claimed head system with multiple groups of drop dispenser and do suggest the instant claimed method steps of *‘dispensing drops from non-error first dispensers of the sets in at least part of the pattern along the selected path for each group’* and the step of *‘moving a second dispenser of the sets in each group along the selected path for that group while dispensing drops from a non-error second dispenser of a set having an identified error first dispenser, in at least part of the pattern for the selected path of the first group’*.

In response to appellant argument regarding Group II (Claim 3) that the combine references of Brown et al. and Tisone et al. are not obvious over the instant claimed method because neither Brown et al. nor Tisone et al. teach or suggest *‘that dispensers of a Set communicate with a common reservoir’*, it is the examiner position that both Brown et al. and Tisone et al. do disclose *‘that dispensers of a Set communicate with a common reservoir’* (Brown: col. 10, line 63 to col. 11, line 28 and more specifically col. 11, lines 21-40, and 45-50; Tisone: col. 7 line 8 to col. 8, line 55 and more specifically col. 22, lines 7-31). Therefore, both Brown et al. and Tisone et al. do suggest *‘that dispensers of a Set communicate with a common reservoir’* as claimed in claim 3.

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In response to appellant argument regarding Group III (Claim 6) that the combine references of Brown et al. and Tisone et al. are not obvious over the instant claimed method because neither Brown et al. nor Tisone et al. teach or suggest 'Series of dispensers or dispenser Frames as is claimed in claim 6' such as that exemplify by fig. 4A of the instant specification, it is the examiner position that Tisone et al. do suggest 'Series of dispensers or dispenser Frames as is claimed in claim 6' (col. 22, lines 16-21). Additionally, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., 'Series of dispensers or dispenser Frames as is claimed in claim 6' specifically as exemplify by appellant of fig. 4A) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Thus, the combine references of Brown et al. and Tisone et al. are obvious over the instant claimed method.

In response to appellant argument regarding Group IV (Claims 7-11, 13, 14, and 22-24) that the combine references of Brown et al. and Tisone et al. is not obvious over the instant claimed method because neither Brown et al. nor Tisone et al. teach or suggest 'that the Sets of dispensers are in a sideways orientation with respect to the "first direction"', it is the examiner position that Tisone et al. do suggest 'that the Sets of dispensers are in a sideways orientation with respect to the "first direction"' (col. 22, lines 16-21). Thus, the combine references of Brown et al. and Tisone et al. are obvious over the instant claimed method.

In response to appellant argument regarding Group V (Claims 12, 15-19, 25-29, 32, and 33) that the combine references of Brown et al. and Tisone et al. is not obvious over the instant

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claimed method because neither Brown et al. nor Tisone et al. teach or suggest the dispenser *Frames* as claimed and ‘*methods for choosing which Frame to use during successive steps of the claimed array fabrication process*’, it is the examiner position that Tisone et al. do suggest that the dispenser *Frames* as claimed and ‘*methods for choosing which Frame to use during successive steps of the claimed array fabrication process*’ (col. 22, lines 16-21). Therefore, the combine references of Brown et al. and Tisone et al. are obvious over the instant claimed method.

In response to appellant argument regarding Group VI (Claims 21 and 31) that the combine references of Brown et al. and Tisone et al. is not obvious over the instant claimed method because neither Brown et al. nor Tisone et al. teach or suggest ‘*that dispensers of a Set communicate with a common reservoir*’, it is the examiner position that both Brown et al. and Tisone et al. do disclose ‘*that dispensers of a Set communicate with a common reservoir*’ (Brown: col. 10, line 63 to col. 11, line 28 and more specifically col. 11, lines 21-40, and 45-50; Tisone: col. 7 line 8 to col. 8, line 55 and more specifically col. 22, lines 7-31). Therefore, both Brown et al. and Tisone et al. do suggest ‘*that dispensers of a Set communicate with a common reservoir*’ as claimed.

Therefore, the combine teachings of Brown et al. and Tisone et al. do render the method of the instant claims *prima facie* obvious, and the rejection should be maintained.

4. Claims 4, 20, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (US Patent 5,807,522) and Tisone et al. (US Patent 6,063,339) as applied to claims 1-3, 5-19, 21-29, and 31-33 above, and further in view of Gamble et al. (US Patent 5,958,342).

DISCUSSION

Appellant alleges that the combined teachings of Brown et al., Tisone et al. and Gamble et al. fail to teach or suggest each and every element of the claimed invention because the combined teachings of Brown et al. and Tisone et al. fail to teach or suggest numerous elements of the claims of the subject application above and beyond pulse jet dispensers. Thus, the combine teachings of Brown et al., Tisone et al. and Gamble et al. do not render the method of the instant claims *prima facie* obvious.

Appellant's arguments are not convincing since the combine teachings of Brown et al., Tisone et al. and Gamble et al. do render the method of the instant claims *prima facie* obvious. It is the examiner position that the combined teachings of Brown et al. and Tisone et al. do suggest numerous elements of the claimed invention as discussed above in paragraph 3. Therefore, the combine teachings of Brown et al., Tisone et al. and Gamble et al. do render the method of the instant claims *prima facie* obvious, and the rejection should be maintained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

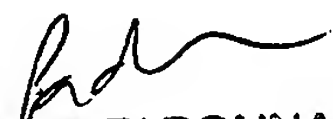
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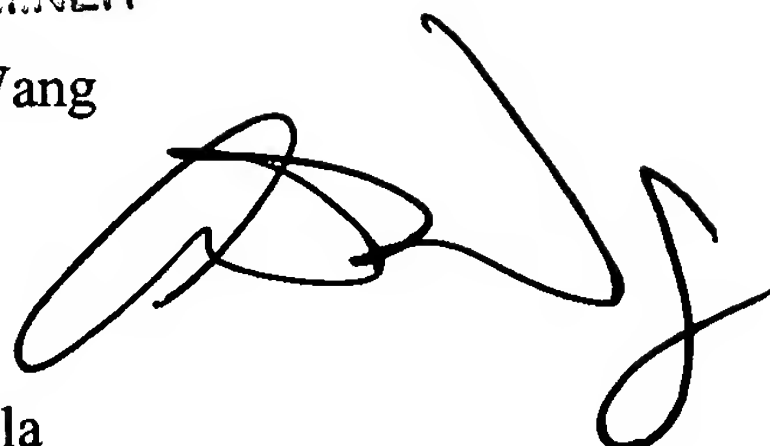
Conferees:

Primary Examiner Padmashri (SHRI) Ponnaluri

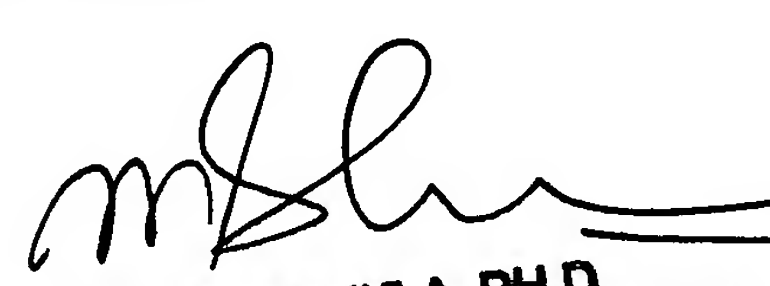

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January 20, 2006